VIII. SNOHOMISH COUNTY

The Snohomish County portion of the study was divided into three transit corridors in order to facilitate the park-and-ride demand forecasting process. Permanent park-and-ride lots were grouped into logical corridors reflecting major network, geographic, and service features.

The resulting study corridors are:

- Southwest Snohomish
- North Snohomish
- Southeast Snohomish

The Snohomish County study area and its major transportation facilities are presented in Figure 8.1. The three individual corridors are presented along with their corresponding permanent park-and-ride lots in Figures 8.2 through 8.4.

DEMAND ESTIMATES AND FORECASTS

As indicated, the focus of the demand estimation approach was to provide corridor-level demand estimates for the major transit corridors in each county. Lot-specific forecasts developed as part of the described three-part methodology were aggregated to the corridor level; these estimates should not be viewed as site-specific implementation recommendations or forecasts. They are based on optimistic assumptions regarding lot placement, size, and transit service in order to develop a corridor-level "unconstrained" demand estimate. Detailed analyses based on committed transit services, known service area characteristics, competing services, and planned facility locations should be considered as part of site selection and design criteria for actual implementation.

Existing Estimates

Based upon the previously-described methodology, inputs, and assumptions, existing year 2000 estimates were developed for the identified coverage-area lots for each transit corridor. A current need for 2450 additional stalls was identified for the county overall, with approximately 1000 identified for the Southwest corridor, 750 for the North corridor, and 700 for the Southeast corridor.

The Lynnwood Park-and-Ride Lot

INSERT FIGURE 8.1 – SNOHOMISH COUNTY STUDY AREA

INSERT FIGURE 8.2 – STUDY AREA FOR THE SOUTHWEST SNOHOMISH CORRIDOR

INSERT FIGURE 8.3 – STUDY AREA FOR THE NORTH SNOHOMISH CORRIDOR

INSERT FIGURE 8.4 – STUDY AREA FOR THE SOUTHEAST SNOHOMISH CORRIDOR

These estimates represent ideal demand conditions, unconstrained by lot placement, facility access, or transit service. All of these conditions strongly influence park-and-ride facility use[1]. These existing year "unconstrained" estimates were the first step of the methodology developed for future demand forecasting. The results of this analysis are presented by corridor and lot in Table 8.1.

Scale Model for Everett Station

Future Forecasts

Year 2010 and 2020 forecasts were developed for the identified coverage-area lots for each transit corridor. These forecasts were based upon the base year demand estimates, and then grown at both the rate of population growth and the rate of ridership growth to provide a range of possible future demand.

2010

A future need of between 2850-3650 stalls in addition to the estimated year 2000 need was identified for the county overall, with approximately between 2200-2900 for the Southwest corridor, 250 for the North corridor, and 400-500 for the Southeast corridor for the year 2010. The population- and transit-based growth rates were similar for the North corridor, and thus did not produce a range of estimates. Demand analysis results are presented by corridor and lot in Table 8.1.

Everett Station Concept Drawing

2020

A future need of between 2250-3500 stalls in addition to the estimated year 2010 need was identified for the county overall, with approximately between 1600-2700 for the Southwest corridor, 300 for the North corridor, and 350-500 for the Southeast corridor for the year 2020. The population- and transit-based growth rates were again similar for the North corridor, and thus did not produce a range of estimates. Demand analysis results are also presented by corridor and lot in Table 8.1.

[1] Ibid.

Table 8.1

Parking Demand for Snohomish County

Park & Ride Facility	Lot Capacity	Year 2000 Demand		Future Demand	
		Observed	Estimated	2010	2020
Southwest Snohomish P&R Lots (I-5)					
Mountlake Terrace	365	384	660	980 to 1070	1190 to 1430
Lynnwood	968	954	860	1360 to 1490	1650 to 1980
Ash Way/Swamp Creek	1427	912	900	1220 to 1340	1490 to 1790
Mariner/McCollum	1076	1084	780	1330 to 1460	1620 to 1950
Eastmont/S.Everett	351	85	740	940 to 1020	1150 to 1380
Mukilteo	Proxy	N/A	40	40	50
Everett Station	Proxy	N/A	1230	1550 to 1700	1880 to 2260
TOTAL	**4187**	**3419**	**5210**	**7420 to 8120**	**9030 to 10840**
North Snohomish P&R Lots (I-5, SR 9)					
Marysville 1	124	120	250	310	370
Marysville 2	104	90	310	370	450
Marysville East	Proxy	N/A	250	300	370
Smokey Point	Proxy	N/A	120	150	180
Arlington	27	24	90	110	130
Stanwood I-5	104	118	80	100	120
TOTAL	**359**	**352**	**1100**	**1340**	**1620**
Southeast Snohomish P&R Lots (SR 9, I-2)					
Lake Stevens	Proxy	N/A	330	470	570
Snohomish	106	48	140	170	200
South Snohomish	Proxy	N/A	80	100	120
Canyon Park	297	220	620	800 to 900	970 to 1230
Monroe	117	122	100	120	140
Sultan/Goldbar	89	23	40	50	60
TOTAL	**609**	**413**	**1310**	**1710 to 1810**	**2060 to 2320**
COUNTY TOTAL	**5155**	**4184**	**7620**	**10,470 to 11,270**	**12,710 to 14,780**

Notes:

These are corridor-level estimates and forecasts and do not represent site-specific implementation recommendations.

Assumed annual growth rate for I-5 Snohomish County: 1.019 - 1.052

Source: Parsons Brinckerhoff

RECOMMENDED PROGRAMMING & COST ESTIMATES

Southwest Snohomish experiences a large increase in demand over the various planning periods. A substantial six-year capital program by Community Transit and Sound Transit meets existing need but addresses only part of the need forecast for 2010. Large investments in expanded park-and-ride facilities would still be required to meet needs in the Long-Range planning period. For North Snohomish and Southeast Snohomish, growth is less dramatic, showing more consistent and moderate increases in additional needs. The total additional capital need for Snohomish County is similar to that of King County.

Calculated need for new park-and-ride stalls in Snohomish County is presented in Table 8.2. The finalized recommended project programming is presented along with cost estimates in Table 8.3 and Figure 8.5.

Table 8.2

Identified Snohomish County Park-and-Ride Capacity Needs

	Programming Period				
Transit Corridor	Short-Term (Existing 2000 Need)	Mid-Range (2000 Need Unmet by 6-Yr. Program)	Long-Range (Additional 2010 Need)	MTP Horizon (Additional 2020 Need)	Total (2000-2030)
Southwest Snohomish	2,250	-1,550	1,500	2,600	6,350
North Snohomish	1,050	900	300	350	1,700
Southeast Snohomish	1,000	700	600	500	2,100
TOTALS	**4,300**	**50**	**2,400**	**3,450**	**10,150**

Notes:

Numbers rounded to the nearest 50.

Short-term stall numbers represent estimated year 2000 need.

Mid-Range stall numbers represent the estimated year 2000 need minus existing 6-year programming.

Long-Range and MTP Horizon stall numbers represent forecasted needs in addition to the previous planning period, i.e., in addition to Mid-Range and Long-Range, respectively.

The Total column represents total forecasted need between 2000-2030. It therefore excludes numbers in the Mid-Range column.

Negative numbers represent current programming in excess of forecasted need for that planning period.

Source: Parsons Brinckerhoff

Table 8.3

Snohomish County Proposed Project Program

Map #	Stalls	Corridor	Location	Facility Type	ROW Cost Area	Estimated Construction Cost	Estimated ROW Cost	Estimated Total Cost
Short-Term 2000-2006								
S1	400	SW Snohomish	I-5 Mountlake Terrace	Structure		N/A	N/A	$5,850,000
S2	1,000	SW Snohomish	I-5 East Everett	Surface		N/A	N/A	$6,752,000
S3	400	SW Snohomish	I-5 South Everett/I-5 @ 112th	Surface		N/A	N/A	$17,796,000
S4	300	SW Snohomish	I-5 Lynnwood Transit Center	Surface	SW Urban	$1,500,000	$4,800,000	$6,300,000
S5	250	SW Snohomish	I-5 Swamp Creek	Surface		N/A	N/A	$9,637,000
S6	100	SW Snohomish	Mukilteo Station	Surface		N/A	N/A	$7,683,000
S7	870	SW Snohomish	Everett Station	Surface		N/A	N/A	$15,506,000
S7A	746	SW Snohomish	Everett Station ****	Surface		N/A	N/A	$2,978,800
S8	100	SW Snohomish	I-5 Edmonds Station	Surface		N/A	N/A	$11,600
S9	300	SE Snohomish	SR 9 Lake Stevens	Surface		N/A	N/A	$3,800,000
S10	150	North Snohomish	I-5 Marysville	Surface		N/A	N/A	$1,700,000
S11A	200	North Snohomish	Marysville* **	Surface	N&E Urban	$1,000,000	$2,400,000	$3,400,000
S13A	300	SE Snohomish	I-405/Canyon Park ***	Surface	Rural	$2,500,000	$2,100,000	$4,600,000
Total	**5,116**			**Short-Term Sub-Totals**		**$5,000,000**	**$9,300,000**	**$86,014,400**
Mid-Range 2007-2015								
S11B	250	North Snohomish	Marysville * ** ****	Surface	N&E Urban	$1,250,000	$3,000,000	$4,250,000
S12	350	SE Snohomish	SR 9/SR 2/Lake Stevens*	Surface	Rural	$1,750,000	$2,450,000	$4,200,000
S13B	300	SE Snohomish ***	I-405/Canyon Park	Surface	Rural	$1,500,000	$2,100,000	$3,600,000
Total	**900**					**$4,500,000**	**$7,550,000**	**$12,050,000**
ITS - Freeway Only								$529,200
ITS - With Arterial Messaging								$1,188,600
CCTV								$444,000
				ITS Sub-Total				**$1,632,600**
			Mid-Range Sub-Totals with Preferred ITS Components			**$4,500,000**	**$7,550,000**	**$13,682,600**

*assumes 50% of demand for SE and N is met by reserve capacity at SW

**add and consolidate at Marysville

***600 stalls for Canyon Park long-range moved to short and mid-range, 300 each, per CT request

****200 from Marysville moved to short-term per CT request

****Everett Transit program, capacity not deducted from future programming

Table 8.3 (cont.)

Snohomish County Proposed Project Program

Map #	Stalls	Corridor	Location	Facility	Type	ROW Cost Area	Estimated Construction Cost	Estimated ROW Cost	Estimated Total Cost
Long-Range 2016-2020									
S14	1,000	SW Snohomish	I-5 Mountlake Terrace/Edmonds	Structure		SW Urban	$15,000,000	$8,000,000	$23,000,000
S15	500	SW Snohomish	US 99/Edmonds/Shoreline	Surface		SW Urban	$2,500,000	$8,000,000	$10,500,000
S16	750	SW Snohomish	I-5 Corridor/Lynnwood	Structure		SW Urban	$11,250,000	$6,000,000	$17,250,000
S17	300	N Snohomish	Marysville	Surface		N&E Urban	$1,500,000	$3,600,000	$5,100,000
Total	**2,550**					**Long-Range Sub-Totals**	**$30,250,000**	**$25,600,000**	**$55,850,000**
MTP 2030 Horizon									
S18	1,600	SW Snohomish	Central Everett	Structure		SW Urban	$24,000,000	$12,800,000	$36,800,000
S19	1,000	SW Snohomish	Swamp Creek	Structure		SW Urban	$15,000,000	$8,000,000	$23,000,000
S20	500	SE Snohomish	I-405/Canyon Park	Structure		Rural	$7,500,000	$1,750,000	$9,250,000
S21	350	N Snohomish	Marysville	Structure		N&E Urban	$5,250,000	$2,100,000	$7,350,000
Total	**3,450**					**MTP Horizon Sub-Totals**	**$51,750,000**	**$24,650,000**	**$76,400,000**
						SNOHOMISH COUNTY TOTALS	**$91,500,000**	**$67,100,000**	**$231,947,000**

NOTES

1. Program plans are organized by county. The lead agency for a project will be determined at the time of implementation.
2. This program plan identifies the general location, time period, and type of park-and-ride facilities needed. Exact size, location, timing, and type of facility to be determined by local agencies and public process at the time of implementation.
3. Forecasts represent unconstrained transit corridor demand.
4. Cost estimates are in year 2000 dollars.
5. All costs are preliminary planning level capital estimates intended to serve as placeholders. They do not include operations or maintenance costs.
6. Funds have been programmed for lots in the short-term category only. No commitment has been made or is implied regarding funding or the ability to fund further projects.
7. Map numbers may not be sequential.

Source: Parsons Brinckerhoff

INSERT FIGURE 8.5 – SNOHOMISH COUNTY PROPOSED PROJECT PROGRAM

METHODOLOGICAL ASSUMPTIONS SPECIFIC TO SNOHOMISH COUNTY

The methodology utilized for the Snohomish County analysis closely followed the methodology outlined in Section III of this report. Adjustments in methodology which pertain only to this county are presented below.

Coverage Areas

An initial step in the demand estimation involves the identification of ideal coverage areas for each corridor. Coverage areas for individual park-and-ride facilities within each transit corridor are shown in Figures 8.6 through 8.8. Proxy lots and combined existing lots shown in these figures were located for analysis purposes, and do not suggest finalized recommendations.

Transit Assumptions

The PRD model requires the input of transit assumptions. In order to estimate "unconstrained" park-and-ride demand, reasonably aggressive existing and future transit service levels were assumed. These assumptions included:

- The definition of AM peak period was moved back approximately ½ hour to accommodate commute distance and congestion delays to the Seattle CBD.
- Assumed headways are presented in Table 8.4. These assumptions were developed in close concert with Community and Sound Transit.

New Articulated Bus in Downtown Everett

INSERT FIGURE 8.6 – COVERAGE AREAS FOR THE SOUTHWEST SNOHOMISH CORRIDOR

INSERT FIGURE 8.7 – COVERAGE AREAS FOR THE NORTH SNOHOMISH CORRIDOR

INSERT FIGURE 8.8 – COVERAGE AREAS FOR THE SOUTHEAST SNOHOMISH CORRIDOR

Table 8.4

Snohomish County Transit Assumptions

Snohomish County Transit Assumptions																								
	Year 2000								Year 2010								Year 2020							
	Seattle		UW		Everett		Bellevue		Seattle		UW		Everett		Bellevue		Seattle		UW		Everett		Bellevue	
Facility	Head-way	AM Trip	Head-way	AM Trip	Head-way	AM Trip	Head-way	AM Trip	Head-way	AM Trip	Head-way	AM Trip	Head-way	AM Trip	Head-way	AM Trip	Head-way	AM Trip	Head-way	AM Trip	Head-way	AM Trip	Head-way	AM Trip
Arlington	1	0	1	0	90	2	1	0	60	3	1	0	30	6	1	0	60	3	1	0	30	6	1	0
Ash Way/Swamp Creek P&R	11	16	45	4	60	3	30	6	5	36	30	6	30	6	30	6	5	36	30	6	30	6	20	9
Canyon Park	25	7	1	0	1	0	15	12	15	12	1	0	1	0	15	12	15	12	1	0	1	0	10	18
Everett Station	25	7	1	0	60	3	1	0	5	36	1	0	30	6	30	6	5	36	1	0	30	6	20	9
Lake Stevens	1	0	1	0	60	3	1	0	30	6	1	0	30	6	1	0	15	12	1	0	15	12	1	0
Lynnwood TC/P&R	7	26	12	15	1	0	30	6	5	36	10	18	1	0	30	6	5	36	15	12	1	0	20	9
Mariner/McCollum	6	30	25	7	1	0	1	0	5	36	30	6	1	0	1	0	5	36	30	6	1	0	1	0
Marysville 1	36	5	1	0	60	3	1	0	15	12	1	0	30	6	1	0	15	12	1	0	15	12	1	0
Marysville 2	60	3	1	0	45	4	1	0	30	6	1	0	30	6	1	0	30	6	1	0	15	12	1	0
Marysville E	1	0	1	0	45	4	1	0	30	6	1	0	30	6	1	0	1	0	1	0	15	12	1	0
Monroe	90	2	1	0	60	3	1	0	30	6	1	0	30	6	1	0	30	6	1	0	30	6	1	0
Mountlake Terrace	20	9	22	8	1	0	1	0	5	36	30	6	1	0	1	0	5	36	30	6	1		1	0
Mukilteo	36	5	45	4	1	0	1	0	15	12	30	6	1	0	1	0	10	18	30	6	1	0	1	0
S. Snohomish	1	0	1	0	60	3	1	0	30	6	1	0	30	6	1	0	60	3	1	0	30	6	1	0
Smokey Point	1	0	1	0	45	4	1	0	30	6	1	0	30	6	1	0	30	6	1	0	30	6	1	0
Snohomish	26	7	1	0	60	3	1	0	30	6	1	0	30	6	1	0	30	6	1	0	30	6	1	0
South Everett/Eastmont	23	8	1	0	60	3	30	6	15	12	1	0	30	6	30	6	15	12	1	0	30	6	20	9
Stanwood	60	3	1	0	60	3	1	0	30	6	1	0	30	6	1	0	30	6	1	0	30	6	1	0
Sultan/Goldbar	1	0	1	0	60	3	1	0	60	3	1	0	30	6	1	0	60	3	1	0	30	6	1	0

Source: Community Transit and Sound Transit, *transit assumptions snohom cty.xls*

Local Methodological Adjustments

A uniform methodology was applied throughout the study in order to assure consistency of findings. The three step approach outlined in the Methodology chapter (Section III) of the report allowed for minor modifications to be made for each county.

Because the PRD model was primarily developed in King County, adjustments were required to validate the model for use in Kitsap, Pierce, and Snohomish counties. These adjustments were made on a trial-and-error basis using existing observed demand to obtain reasonable results. The following methodological adjustments were made for the Snohomish County analysis:

- In order to account for the heavy congestion from the county line to the Seattle CBD, extra mileage was added to the inputs for distance to the CBD for all lots.
- Three sets of growth rates were estimated for King County. These growth rates were taken from the Sound Transit and PSRC models, and applied to the lots by transit corridor as follows:

	Growth Rate		
Growth Rate Area	**Transit**	**Population**	**Lots**
North Snohomish	1.052	1.020	Arlington Marysville 1, 2, & E Smokey Point Stanwood
Southeast Snohomish	1.031	1.019	Canyon Park Lake Stevens Monroe S. Snohomish Snohomish Sultan/Goldbar
Southwest Snohomish	1.029	1.020	Eastmont/S Everett Everett Station Lynnwood Mariner/McCollum Mountlake Terrace Mukilteo Ash Way/Swamp Creek